

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/486,116	02/18/2000	HIROSHI MIYAZAWA	0670-225	1535

31780 7590 10/18/2004

ERIC ROBINSON  
PMB 955  
21010 SOUTHBANK ST.  
POTOMAC FALLS, VA 20165

EXAMINER
----------

PATEL, GAUTAM

ART UNIT	PAPER NUMBER
----------	--------------

2655

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

m

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/486,116		MIYAZAWA ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Gautam R. Patel		2655	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9, 16 and 18-32 is/are pending in the application.
- 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 16, 18-23 and 27-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                              |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7-15-04</u> . | 6) <input type="checkbox"/> Other: _____                                                |

Art Unit: 2655

**Response to Amendment:**

1. This is in response to amendment filed on 8-12-04.
2. Claims 1-9, 16, 18-32 remain for examination. Claims 24-26 remains withdrawn from consideration.

***Claim Rejections - 35 U.S.C. § 103***

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9, 16, 18-23 and 27-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujisawa, US. patent 5,497,366 (hereafter Fujisawa) in view of Crane, US. patent 5,023,845 (hereafter Crane).

As to claim 1, Fujisawa discloses the invention as claimed [see Figs. 7-21B, especially 7-11 and 14], including an optical pickup, which has objective spot forming means, a plurality of photodetectors, a chassis, and various support means comprising:

(a) objective spot forming means (fig. 7, unit 51) for forming each spot of a plurality of light beams entered via a collimator (fig. 7 and 11, unit 83), on each track of a recording medium (fig. 14, unit 1) [col. 8, lines 47-57; col. 13, lines 12-18; and col. 15, lines 50-66];

(b) a series of adjacent photodetectors (figs. 7, 11 and 15, units 98 and 99) each provided for each spot for receiving reflected light of each spot, the reflected light having

Art Unit: 2655

passed through said objective spot forming means, said collimator, and focus adjusting means in this order [col. 15, line 17 to col. 16, line 2]; and

(c) a chassis (fig. 8, unit 57) mounted with said collimator [col. 13, lines 12-39], wherein said focus adjusting means and said series of adjacent photodetectors are supported respectively by a focus adjusting means support member (fig. 7, unit 63) and a photodetector support member (fig. 7, unit 79 & 100) formed separately from said chassis (unit 57), and the focus adjusting means support member and the photodetector support member are moveable along a direction of an optical axis [see ABSTRACT; col. 19, lines 20-29, & lines 52-55 and col. 21, lines 37-42] are fixed to said chassis at positions along an optical axis [col. 15, lines 8-49; col. 9, lines 39-67].

Fujisawa teaches all of the above elements including plural photodetectors and adjustment of the spacing between photodetectors and lens as disclosed above.

Fujisawa does not specifically disclose well known details of the arrangement of these photodetectors, such as that they are a series of adjacent photodetectors, or a device for visual confirmation (CCD).

However Crane clearly discloses plural adjacent photodetectors and a device for visual confirmation (CCD) [col. 5, lines 17-34 & col. 6, line 55 to col. 7, line 12].

Both Fujisawa and Crane are interested in providing smooth signals from the photodetectors and combine proper signal that are reflected back from the photodetectors to control the tracking and focusing with minimum parts. Both shows multiple detectors, a beam splitter a focusing lens a laser light source and a data processing operation.

One of ordinary skill in the art would have realized that multiple beam paths are subject to dynamic bending displacement and correction is needed, also optimization of energy dissipation or elimination of residual displacement is a good characteristic to have in the system of Fujisawa.

Therefore, it would have been obvious to provide the system of Fujisawa with plural adjacent photodetectors and a device for visual confirmation (CCD) and associated details as taught by Crane. The application or use of the series of photodetectors as taught by Crane would have been obvious, because the series of photo-

Art Unit: 2655

detectors performs the same function in the same way as the series of photo-detectors means of Fujisawa's system, and is an equivalent element. Also one would be motivated to eliminate residual displacement by the use of the CCD monitoring device [col. 3, line 64 to col. 4, line 5; Crane].

4. As to claim 2, Fujisawa discloses:

the plurality of light beams are generated by making light from a light source (fig. 14, unit 80) pass through a diffraction grating (fig. 7, unit 81) [col. 13, lines 12-52].

5. As to claim 3, Crane discloses:

at least one of said plurality of photodetectors includes a plurality of light reception areas for divisionally receiving one light beam [col. 5, lines 17-34 & col. 6, lines 8-38].

6. As to claim 4, Fujisawa discloses:

an optical axis of the reflected light passing through the collimator is changed to an optical axis toward said focus adjusting means by a beam splitter [fig. 10, unit 82] upon which the reflected light passed through the collimator becomes incident [col. 13, lines 12-23].

7. As to claim 5, Crane discloses:

The reflected light incident upon each photodetector is visually confirmed by detecting means (CCD) [col. 6, line 55 to col. 7, line 12].

8. As to claim 6, Crane discloses:

said detecting means is disposed on an opposite side of the beam splitter relative to said focus adjusting means [Fig. 1 and col. 5, line 64 to col. 6, line 38].

9. As to claim 7, Fujisawa discloses:

Art Unit: 2655

said focus adjusting means is made movable between the beam splitter and said photodetectors [col. 12, lines 4-47].

10. As to claim 8, Fujisawa discloses:

focus adjusting means is moved by being slid on said chassis [col. 12, lines 4-65].

11. As to claim 9, Fujisawa discloses all of the above elements including deposition of photodetectors [98 and 99] and focus adjusting means and that they are away from each other by an offset. Fujisawa does not specifically teach that this device placement is related by the well known equation of  $y = ax + b$  where  $a$  and  $b$  are constants).

"Official Notice" is taken that both the concept and the advantages of placing device with  $y = ax + b$  formula are well known and expected in the art when offset between two part is involved. It would have been obvious to have placed these two parts which follows the equation  $y = ax + b$ , because it would provided guideline for the placement of the parts while being formed in the system and thereby saving time and money on wrong alignment and placement. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

12. As to claim 16 it is rejected for the similar reasons as set forth in rejection of claim 1, above. As to the added limitation, Fujisawa discloses:

(d) means for adjusting a distance between said focus adjusting means and said photodetectors, wherein said adjusting means includes a first member for supporting said focus adjusting means and a second member for supporting said photodetectors, the first member and the second member being moveable along a direction of an optical axis [see ABSTRACT; col. 19, lines 20-29, & lines 52-55 and col. 21, lines 37-42] and fixed to said chassis and the distance is adjusted by moving the first member along said second member [col. 9, lines 39-67 & col. 13, lines 12-63].

13. As to claim 18, Fujisawa discloses:

(a) a light reflection optical element (fig. 14, unit 14) for reflecting a plurality of light beams incoming along a direction of a first axial line, toward a direction of a second axial line different from the first axial line, said light reflection optical element being attached rotatably around each of the first and second axial lines [col. 15, lines 17-37 and col. 15, line 50 to col. 16, line 19];

(b) spot forming means (fig. 14, unit 51) for forming a spot of each light beam incoming along the direction of the second axial line from said light reflection optical element, on each track of a recording medium [fig. 14, unit 1] [[col. 15, lines 17-37 and col. 15, line 50 to col. 16, line 19];

(c) support means (unit 79) for rotatably supporting said light reflection optical element about at least one rotation axial line on a chassis, the rotation axial line passing a reference point (138) which is a cross point between the first and second axial lines [col. 15, lines 12-49];

(d) fixing means (inherently present) for fixing said light reflection optical element to the chassis, whose rotational position has been adjusted so that the focus states of said plurality of spots are substantially equal [col. 13, line 24 to col. 14, line 17]; and

(e) reflected light detecting means (units 98 and 99) for detecting reflected light of each spot passed through said spot forming means [col. 15, lines 12-37].

Fujisawa teaches all of the above elements including plural photodetectors and adjustment of the spacing between photodetectors and lens as disclosed above.

Fujisawa does not specifically disclose well known details of the arrangement of these photodetectors, such as that they are a series of adjacent photodetectors, or a device for visual confirmation (CCD).

However Crane clearly discloses plural adjacent photodetectors and a device for visual confirmation (CCD) [col. 5, lines 17-34 & col. 6, line 55 to col. 7, line 12].

Both Fujisawa and Crane are interested in providing smooth signals from the photodetectors and combine proper signal that are reflected back from the photodetectors to control the tracking and focusing with minimum parts. Both shows multiple detectors, a beam splitter a focusing lens a laser light source and a data processing operation.



Art Unit: 2655

One of ordinary skill in the art would have realized that multiple beam paths are subject to dynamic bending displacement and correction is needed, also optimization of energy dissipation or elimination of residual displacement is a good characteristic to have in the system of Fujisawa.

Therefore, it would have been obvious to provide the system of Fujisawa with plural adjacent photodetectors and a device for visual confirmation (CCD) and associated details as taught by Crane. The application or use of the series of photodetectors as taught by Crane would have been obvious, because the series of photodetectors performs the same function in the same way as the series of photo-detectors means of Fujisawa's system, and is an equivalent element. Also one would be motivated to eliminate residual displacement by the use of the CCD monitoring device [col. 3, line 64 to col. 4, line 5; Crane].

14. As to claim 19, Fujisawa discloses:

19. the rotation axial line includes a rotation axial line perpendicular to both the first axial line and the second axial line [col. 16, lines 2-61].

15. As to claim 20, Fujisawa discloses:

the rotation axial line includes a rotation axial line coincident with the first axial line [col. 16, lines 2-61].

16. As to claim 21, Fujisawa discloses:

the rotation axial line includes a rotation axial line coincident with the second axial line [col. 16, lines 2-61].

17. As to claim 22, Fujisawa discloses:

said support means includes a spherical fitting portion [col. 13, line 64 to col. 14, line 47].

18. As to claim 23, Fujisawa discloses:

Art Unit: 2655

light reflection optical element is a triangular prism [col. 14, line 48 to col. 15, line 7]. NOTE: Fujisawa does not use word triangular prism but picture and action of unit are exactly as that of a triangular prism.

19. As to claim 27, Fujisawa discloses various shapes of support means including concave and convex shapes. Fujisawa does not teach that this particular part has concave and convex spherical portion that can be fitted together. "Official Notice" is taken that both the concept and the advantages of providing concave and convex parts and their fitting are well known and expected in the art. It would have been obvious to include these kind of parts, as these parts are known to fit better with each other because of their mutually fitting shape. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

20. As to claims 28-29 and 31-32. Fujisawa discloses various shapes of support means including various screws bolts washers and related accessories. Fujisawa does not specifically teach in detail where each and every screw goes to the extent claimed. "Official Notice" is taken that both the concept and the advantages of providing different screws, bolts and washer in different places for proper attachment of different parts. It would have been obvious to include these kind of parts, and its arrangement in the system of Fujisawa because without proper fixing of parts system will fall apart and will not work. These concepts are well known in the art and do not constitute a patentably distinct limitation, per se [M.P.E.P. 2144.03].

Also arranging parts in different order is well known in the art. It would have been obvious to a person of ordinary skill at the time of the invention to have arranged parts with different connection of bolts and washers. As shown in "In re Japikse **86 USPQ 70 (CCPA 1950)**" that to shift location of parts as such is generally not given patentable weight or would have been obvious improvements. Also using different screws, washers etc. does not change the operation of the optical head at all.

Art Unit: 2655

21. As to claim 30, it is rejected for the similar reasons set forth in the rejection of claim 18, supra.

NOTE: Fujisawa was disclosed in IDS, paper no. 6.

22. Applicant's arguments with respect to claims 1-9, 16, 18-32 have been considered but are moot in view of the new grounds of rejection.

NOTE: As to the arguments regarding new limitations, see new rejection above, which addresses these newly added limitations.

23. Applicant's amendment necessitated the new grounds of rejection presented in this office action. Accordingly, THIS ACTION IS MADE FINAL. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

#### **Contact Information**

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Art Unit: 2655

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

Gautam R. Patel  
Primary Examiner  
Group Art Unit 2655

October 15, 2004

A handwritten signature in black ink, appearing to read 'Gautam R. Patel', with a long horizontal stroke extending to the right.

**GAUTAM R. PATEL**  
**PRIMARY EXAMINER**